

ORBOTECH DIAMOND™ 8

Solder Mask at Its Best



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Orbotech, the worldwide leader in Digital Imaging (DI) for PCB patterning now introduces Orbotech Diamond™ 8, a mass production, high throughput and highly accurate DI solution for solder mask. Powered by Orbotech SolderFast Technology™, Orbotech Diamond 8 is especially suited for highly complex designs. Based on Orbotech's vast field proven experience in DI for patterning, Orbotech Diamond 8 for solder mask imaging improves throughput, yield and productivity while decreasing total cost of ownership (TCO).

Benefits

Leading Mass Production Solder Mask Digital Imaging

- High capacity, high throughput solution
- Dual table transport mechanism for optimal imaging time
- Clean, handling-free environment
- Supports automation solution

SolderFast Technology™ for High Throughput and High Imaging Quality

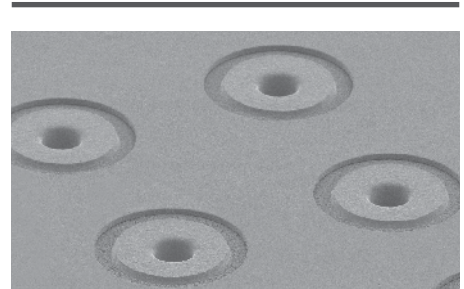
- Patented high-energy illumination source resulting in fast throughput on a large variety of solder resists
- Controlled wide range UV spectrum for best quality side walls and minimal undercut
- Sophisticated optical mechanism enables high Depth-of-Focus to suit the most challenging topographies
- Designed to match current customer process, eliminating the need to qualify new materials

Superior Imaging Accuracy

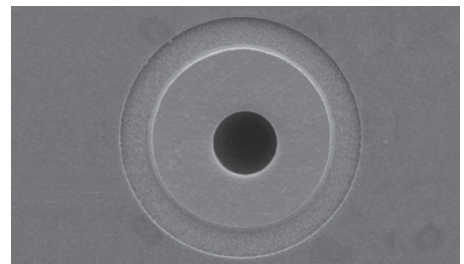
- Unmatched registration accuracy tailored for high accuracy designs
- Advanced scaling modes, using proven Orbotech DI algorithms, ensure high accuracy for demanding panel distortions

Lower Total Cost of Ownership (TCO)

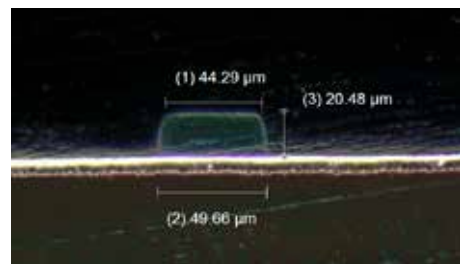
- Improves overall production system efficiency
- Reduced power consumption; substantial materials savings
- Long lifetime LED's to reduce operational costs



High quality SM imaging, no residues on vias



High registration accuracy



50µm solder dam, 20µm thickness on Cu



100µm solder dam, 40µm thickness on Cu





Leading Mass Production Solder Mask Digital Imaging

Orbotech Diamond™ 8 is designed to expose a wide variety of conventional solder resists at high speed. It raises the bar by delivering high throughput with its proven dual table solution. Seamless connectivity to CAM ensures fast, easy set-up and smooth job changes. The system also automatically recognizes a wide array of target types to meet any production demands. Orbotech Diamond 8 operates in a clean, hands-free environment, ensuring no handling damage. As with all Orbotech systems, the intuitive graphical user interface makes Orbotech Diamond 8 easy to use.

SolderFast Technology™ for Superior Performance

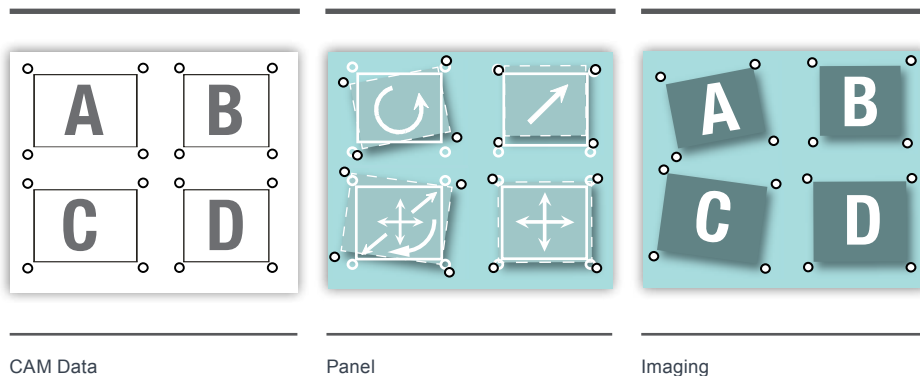
Orbotech SolderFast Technology™ presents controlled wide UV spectrum to ensure fast throughput and high quality on a variety of solder resists. Unique one pass exposure enables uniform solder mask imaging over the entire panel. The sophisticated optical mechanism of Orbotech Diamond 8, including patented optics and high energy illumination, enables high DOF (Depth-of-Focus). This ensures consistent, precise imaging quality, overcoming the most challenging surface topography variations as well as any distortions or abnormalities. Orbotech Diamond 8 delivers the most advanced imaging quality with no need to deploy an autofocus mechanism.

Superior Imaging Accuracy

Orbotech Diamond 8 delivers outstanding accuracy down to $\pm 12\mu\text{m}$, enabling improved yields and productivity on the most advanced PCB applications.

Multiple advanced scaling modes are supported including:

- Auto Scaling / Fixed Scaling
- Partial Scaling: Sub-area registration



Lower Total Cost of Ownership (TCO)

Orbotech Diamond 8 enables reduced total cost of ownership while meeting the industry's increasing demands for high-end mass production. High speed and overall improvement in production system efficiency contribute to significantly lower TCO so that PCB manufacturers can quickly achieve maximum ROI. Advanced illumination and optics technology plus CAM integration reduce solder mask imaging setup and production time. The Orbotech Diamond 8 also significantly reduces power consumption.